The Silicon Valley of Hardware | Future Cities | WIRED、2016 年
directed by Jim Demuth

it's not that Sil and valy got divorced from technology they're very much about technology they just kept moving up the stack and the key thing that drove that in my opinion was mors law mors law is named after Gordon Moore who was one of the founders of Intel in like 1960s he came out with a paper he predicted that every 2 years I believe it was the number of components that could fit in the same piece of silicon would double and so in one year you you could fit 10 transistors in here 2 years later it would be like 20 then 40 a decade on you' re talking about like millions and then billions imagine you have a printer and you're printing pages and you want to be more efficient well you go from 12-point font to Sixpoint font hitting twice as many characters in one page and you're getting twice as much information of of your printer all in one go and that's literally all moris law has been is reducing the font size of circuits in the 70s and 80s there many failed research attempts to build parallel computers like computers that were like you know the cray machines and the thinking machines 60,000 processors and scale up and what you found was that if you spent more than 2 years of research time to try and double the performance of your computer it was by far cheaper just to sit back and wait and let guys like Intel just move Mor's law ahead and buy the next fastest processor and so.

what you found was that actually being in Hardware wasn't profitable and so what really sold products back in the day was features well one of the things you can do with Windows 98 is similar to the web you can navigate on your hard drive using the backwards and forwards buttons just like you would on the web the first generation windows that would come out and a new generation would be so slow it'd be completely unusable and then 2 years later like oh it' s actually kind of okay and then four years later it's like zipping along it's not cuz Microsoft made it faster the computers got faster for free and so people are able to now not have to worry about writing detailed stuff in C code they could use highle languages they're able to use like web pages and JavaScript comes along and with all of that sort of fervor going on and people chasing that Innovation there was no value in soldering Parts there really wasn't in 1983 worldwide sales of personal computers increased 76% but last year the increase was only 19 % and this year analysts predict that sales growth will slow to about 4% losses among the two largest home computer makers through June of this year surpassed $600 million and that building of stuff had to go to an economy where people were paid a lot less and what you see is now

that Sil and valy the whole Tech ecosystem is sort of like driven as far as the road goes and now Mo's loss sort of end is ending or ended and the car is still kind of gliding off the cliff right but there's no more road underneath it and they' re like hlike computers just aren't getting that much faster anymore and so now you're seeing people going through a phase of optimization which is great but at the same time people are like okay well how do we differentiate my product right like optimization sucks that's not a great business model because now we

have supercomputers in our pocket now the question is what do we do with it right and what does that thing in my pocket not already do and so people are realizing there's Niche markets for Hardware

we need to have a small accessory I'm going to have like my Fitbit all these little things my little digital locks my Smart Homes my sensor networks the iot sort of stuff coming up and they say great we need to figure out how to build this and now they're coming back to this ecosystem and being like Oh you guys know how to solder we forgot [···] you know you try doing something like that in the UK it would take you around a month typically to make something which is specialist from an engineering firm here you can in a couple of days let's say we completely designed a new robot we can get it out pretty much in a week even if there's 10 parts we can send it out or we can do it ourself so you get 10 3D printers or print at the same time and you get all the parts put it together and just fire I never seen any prototyping like that when we were in States for for some of the sener ports we can order in the morning and then we get it in the afternoon or the day after we can get manufactured part and in a few days in Switzerland we were planning to do this robot in 9 months and here we have the opportunity to to make it in in 3 months so it's really a race

if you look back through the years like obviously shenin became a manufacturing Hub very very quickly and not that long ago was literally rice patties academic wise and in popular media it's usually summarized in one sentence which is that shinen was a small sleeping fishing Village and then because it was designated as a special economic zone it became a metropolis overnight that singular sentence is what I'm trying to demystify through my work today exactly how many people lives in Shenzhen is a mystery the number 10 million is used more as a reference so from 300,000 to 10 million this population grows no cities in the history of human civilization as we know that was able to do this prior to 1980s China was in a very poor economic State there was a stagnation of Industry there was a plan economy no one was allowed to own business it was a very poor country the leaders in Beijing have been thinking about what can they do to try to lead the country out of poverty

Cui Xiao Song (Deputy Department, Chief Shenzhen Museum): "This photo was taken from the Nanyang Electronic Factory in Huagiang. The economy of China was struggling from the constraints of ultra-left-wing mindset, economy struggled considerably. This graph illustrated income disparity between hong kong and Shenzhen in 1977, the difference was tenfold. People's lives were getting worse and worse. When Prime Minister Deng Xiaoping viistied, he said:"It's not a question of Government ơ effectiveness, it's a question of policy" . So he changed the policy and introduced the opening up process. [···] This photo was taken from Nanyang Electronic Factory in Huaqiang. These workers are on their way to work, these photos capture spirit of people living here at that time. People of SHenzhen remmeber Deng Xiaoping fondly, without him, there' d be no Shenzhen. [···] fist ATM Machine in Shenzhen. It wasn't as automatic as ATM's we've today, you wrote how much money you wanted on a piece of

paper, then slipped that note into machine, and osmeone at back of machine'd hand out cash. Shenzhen's historical mission was: technology, knloledge, and a window to external world. It also served as window for knowledge. We wanted t ointroduce advanced knowledge and ideas from abroad. Shenzhen was proven succesful, so model has been promoted to rest of China. Deng Xiaoping once said: "Cross river by feeling for stone."That stone was Shenzhen.

for they set up the four special economic zones each of them next to a already developed economy the ambition was simply what can the country do to generate jobs to generate economy to feed the people essentially was a very actually modest intention under the plan economy there was a a social safety net every person was rationed was food coupons clothing coupons electricity coupons it was only in Shin Jin you can buy a piece of bread with money to be willing to come to shinen to the special economic zone to try to create something else it attracted people who wanted to have more freedom fore what to me what' s remarkable about Shenzhen is that even the planners themselves would tell you that the city evolved in a way much bigger and faster than they would have predicted I think it's it's overly gener to think that shinen was nothing and then with this setup special economic zone suddenly it became a city it didn't there is something else that's not answered simply by top down planning

2016 年 INTEL DEVELOPER FORM、SHENZHEN yes so good morning thank you all for joining me in a discussion about Innovation that is happening right here in China we're investing with you the developer Community we have been investing in open- Source Solutions because we know that when there are standards and when there are open- Source offerings that the pace of Technology Innovation and the pace of technology adoption accelerates I think for the past 100 years the Industrial Revolution put us into small cages consumerism has cured a lot of creativity but for the poster industrial generation they should have more freedom to create to explore to invent I think through make movement we're bringing it back so we're here with the MakerBot cupcake CNC which is a 3D printer you can build things like Tom York's head because he actually open sourced the data that was filmed for a video of his now what's also interesting about this whole scenario is that there's a whole thriving community of users who are taking these to build all kinds of different objects they're sharing the objects online and additionally they're sharing information on how to build and improve upon the design everything is completely open sourced the software is open sourced the hardware is open sourced I just can't wait to see what people come up with I think the recent emerging of the

INTEL MASS MAKERSPACE ACCELERATOR

makeup movement pretty much St among 2003 2004 in the US laser cutting and 3D printing is helping people to be able to build stuff and actually build it for fun rather than just having business purpose right around that time this guy named D dhy he was thinking about starting a publication called make before make came out the only word we had was a hacker right and I think he didn't

want to call the magazine hack because it had a really negative connotation at the time and make was sort of the thing you would type to compile a program so it would resonate well with programmers and maker was like sort of the demonym of people who would read the magazine that sort of coined the turn maker I think in creating that publication he sort of solidified the movement in the maker Fair created that phenomenon

MAKER FAIRE, SHENZHEN, 2015

in China in the beginning nobody knows about makers nobody cared about maker but because we go to the make F in New York in area we're so jailers so instead of waiting for someone to do it we say why don't we do it when they told me they were going bring the first maker Fair here I was like how do you have a maker fair in a area where people don't make for a recreational thing they do it for a job right you know cuz making in the west is something that you're using to remind people who are in service economies that there's a thing called manufacturing right when you have a manufacturing economy you want to remind them there's manufacturing it seems weird and what I realized is that actually China's middle class is the size of the entire United States population so even if a small section of Chinese people had risen to the upper middle class big enough to create a movement in China itself compared to the United States scale of making we don't know it's going to be successful or not the first year we have over 60 makers and last year we have over 200 makers it's a huge number some interesting phenomena also emerging out of this in the past years

what's happening is the Open Source Hardware movement traditionally the second board is close and proprietary you need to have a contract a non-disclosure and a huge sum of prepayment in order to get access but with open source power everybody can access to that information and everybody can modify that to sue their need people here they create a secret board and just under expectation it is going to be open it's going to be copy and evolved by someone else there's no one Runing around in s and say okay well I should be creative for creating this if someone else can make this get someone else to use it marer the better not having the ego attached to a creations and understand how actually open source system works the makeup movement is at that junctures I'm getting a little sick of hearing about the same people on TV over and over and over again so I decided to do something about it this Arduino project which I called the enough already will mute the TV anytime any of these Overexposed personalities is mentioned to mute the TV I'm going to use an IR LED now anytime a keyword is mentioned the TV will mute for 30 seconds our producers caught up with Kim Kardashian in earlier today it should do a pretty good job of protecting our ears from having to hear about the details of Kim Kardashian's wedding aduino is becoming the trigger point because it has so many millions of makers using that this is a phototype he trying to make robotic arm for their people have parkings and diseases we won't make a spoon like this and if you' ll just sh here and stable if we come to sh like 10 years ago 20 years ago it will be very difficult for our maker to tap into the resources but now you have so

many resources it's in the middle of a reforming so the big company especially the cicon providers like Intel like Adil like TI they look at that oh we have new customers we have new possibility for new future applications of Technologies so they make their own controller board like Edison like curri so they they they want to tap into the early stage of the development of the applications

now this board is based on the Intel technology it's a tiny dual core computer system it has Wi-Fi Bluetooth and it's also it it run a Linux operating system on it I think part of the reason Intel is having to sort of turn that way they know their road map as well as anyone else does they they kind of Define more as law and they saw the bridge go out from under youan before anyone else did they've managed to drive technology like this and then the other foundries like tsmc and UMC have always tril behind but now they slowing down everyone's catching up they're like oh God we're looking for air and trying to find a place to move and so they've struggled to keep up with the phenomenon they created they haven't made Headway into Mobile and those are the most ubiquitous computer today they're missing on a huge Market opportunity and so to the extent that they' re trying to figure out how to adapt their Innovation model to something more flexible and so they really want to make sure the Intel brand is in front of the youth to make sure that they remember that Intel is actually like a thing that they want to design with later on and not just you know something Out Of Reach

we have tried to introduce it to 9 years old this thing is a little bit difficult but it's acceptable you do not need to write any boring code in a smart note you can just drw and drop and Link them together what they're doing is they' re learning how to code on a computer translate that into hardware and they' ll build a project on our laser cutter or 3D printer for something to accept a stimulus light motion or sound and then output some result last year one kid built a key reminder for his mom so that when she left the house a motion sensor would pick up her movement and say hey don't forget the key and it's kind of funny to hear that a 8-year-old will know whether he wants to be doing mechanical circuits or just a purely software experience so that that's ENT level and then we give them more systematic introduction how to build up the skills of your go you can use a mixure space to create whatever you want you are genius you are young inventors I've seen some great examples of Open Source Hardware being used to actually make a difference and create a better world the difficulty is monetizing that because I do believe that business Sol a lot of the world's problems and people need to be able to make money if you're providing value to the world which is making the world a better place then there should be compensation for that in 2010 I started the first maker space in China

Coen I got invite a lot to give a talk about open source power the first question always come up from people's mind is how do you protect your intellectual property and how can you make money if you don't protect your intellectual property I got that that question in Shanghai I got that question in Beijing I got that question everywhere I go but when I give the same talk in senen the

reaction I got is so what's new about this we've been making money on this for 20 years

HUAQIANGBEI ELECTRONICS MARKET

HAO YUNHUI (Ceo, SEG MAKERS PACE): This is the largest electronic components market in the world. There are about 800-900 shops in this mall.

the reason we're here in in Wong Bay is literally because of the electronics markets you know it's a fantastic resource of all different possible components and different devices which can kind of be Frankenstein together to make prototypes by the teams it's a source of inspiration it's a source of discovery of new products that could potentially be taken to the west and like I see every month a different invention down there nine times out of 10 they're probably not going to make it to the west but some of them do

HAO YUNHUI (Ceo, SEG MAKERS PACE): This product shows innovative attitude of Huaqiangbei. You can use it to charge your phone and also warm up your hands. This product was created by someone at my university. It will record the data when you play Badminton.

you can get a little bit of a feel here what's even Upstream of what's going to hit the tech in the United States you you see a couple things popping up here there a little shop will write will pop out of nowhere selling these things you had heard of before like the hoverboards were here a couple years before they hit the United States and then you eventually sort of see them hit the states and other countries

HAO YUNHUI (Ceo, SEG MAKERS PACE): This is one of the best areas of Huaqiangbei, the people here have the latests products in the world. This phone cover has a built-in 3d lens. With the glasses, you can then watch a 3d movie.

there's a number of different ways to sort of look at the market for an engineer you're sort of limited at thumbing through cataloges and looking at pictures and very slowly going through specification sheets for example is if you want to put a switch in a product you want to know how it feels you want to kind of know the ex size and the little mountings and the fussy bits and it can take a long time to find exactly the right part you come here and they're like stalls with like hundreds of different types and you can just reach in and just touch them and play with them and you can like walk stall by stall and see all the different variety and it's not they're it's not just a showroom if once you find the switch you like you can be like hi I like to buy a thousand of them and then for a very low price you can just over-the-counter buy it carry it off and you know go into production

HAO YUNHUI (Ceo, SEG MAKERS PACE): [you can fix your phone]. THis is our friend, he is very reliable. It cots 15 pounds to replace the screen.

I learned this skill by practising with lots of phones, just dissasem-

bling phones until I understood. I have learned things from different places, but it has taken many years to learn.

here it's got a huge amount of acquired um knowledge and skill there's electrical engineers there who will sold up 50 pcbs for you in record time you can go down there and piece together different components to make a new mobile phone there's nowhere else in the world you can do that you know you can get like a a chipset that was in a notebook for example for you know less than $15 which can enable computing power and sell a new product um that's you know fantastic resource for some of the startups that kind of philosophy has kind of spread out all around China

HAO YUNHUI (Ceo, SEG MAKERS PACE): THese people here are all one group, they all know each other. One person will only do one portion of the work, they will give the other portion of the work to another friend to do, so they can finish the work very quickly. This is how the whole city works: some pople can design, other peopl can manufactuere, and ohter poeple can sell, so everyone is working together. It only takes 2 or 3 months for a product to be ready for the market. Outside of Shenzhen it takes 1 whole year, but in Shenzhen it only takes 3 montsA [···] They are nromally part of the old generation of entrepeneurs. They go through the apprenticeship system. Some people come here to start their business and then take on apprentices. Once the apprentice has completed their studies they open up a booth, or a shop like this one, so their skills are learn through their mentor. This is the method.

fore for for when we starting to look at the maker coming to senen there's this excitement on how open this system is like nowhere else you can buy all sort of stuff everything is available in volume but in the west there's a binary distinction between the makers and the how startup the maker you do this for fun you do this for your passions but when you're starting to make this into a business you should forget about sharing you should forget about all this open stuff and focusing on the business but in here there's very little differentiations between I want to make this for fun and I want to make this for profit there's no binary division of of the mindset of makers versus startup maker and startup in China is a Continuum you shouldn't been stopped from making money out of the thing you love to do and you should not be forced to choose between open and proprietary just because you want to become a business right now it's just in the west we haven't seen open source hardware system working

HAO YUNHUI (Ceo, SEG MAKERS PACE): This is the apple logo, we make it here, it's exacttly the same as the real one. The engraving on the back, this engraving, we can also make it so it's exactly the same. "Do you engrave it with a laser?"Yes. Even worse it's that before the new-genration iPhon has launched in China, we already have a number of identical imitation products. The imitations are really high quality, they're exactly the same as the original. The iPhone costs 700 pounds, right? But in reality, a relaly good dopy costs only 100.

for in the west there's an idea that I can have a company that produces nothing has a ton of patents but produces money by suing everyone for rights to those patents don't even have inventors you have lawyers making money off of buying intellectual property and trading it that's weird right it's kind of weird that you produce nothing but make a lot of money the idea that you can take an idea in a world that's this big and say exactly one person owns the right to it globally like apple has the right to the phone with rounded rectangles they're the only people who can produce that really like seriously this is the world we're going to live in like we just give people monopolies through the IP system for 20 years for stupid ideas because they were first toile that made sense back in the day when there were fewer people less innovators a less connected world now we have like this network of people where like we're empowered to do our things and we can almost trade our creativity in China's ecosystem is this network ecosystem of an idea for an idea like let's let's trade know you realize you're placing ecosystems I need other people around me you can't be a dick to like all the other guys around you just because you have the pat Monopoly in this thing someday you' re going to be on the bottom side of the chain and you're going to need other people's help and so you build networks of collaborations with people by sharing in this open source philosophy

"oh yeah we have our first copycat well that's not copycat let's say it's a fan the guy reverse engineer from the video I've seen published the plan of the of 3D models you can download and PR your own one what we want to do is we want to print it all the hardware companies that come in here of course we encourage them to patent all of their technology but we don't expect them to fight anybody who's copying them we expect them to be moving much faster than anybody who's copying them and coming up with the next thing the whole time and building a brand and then eventually those patents may get used when they get into a patent tradeoff that's the use of the patents not not not to stop people copying you the way to stop people copying you is to make whatever They' re copying IR relevant because you've come up with something much better a huge barrier I think to small companies in the United States is like the patent system and the copyrights and just like left and right just legal challenges and you spend a huge portion of your money on lawyers and IP filings and all that sort of stuff it's a drag it really is if you want to be making stuff you want to be actually working with people and sharing ideas openly and getting things going

hi I'm sh Shen I like to invent things this one it's called a solar wheel you control speed by this is my lat menion it's called hover tracks yeah the hoverboard story is a very interesting example of somebody in America who came up with the intellectual property and then spent a long time fighting manufacturers who were actually creating something which was similar that's a great example of a case where I would have encouraged somebody not to start like fighting around IP protection it's better just just to build a brand around a really great product make sure that you've got you know the leading product in the area this is really the first time we have a technology product which become widely popular which become a cultural icon but we don't have a name for it it just emerged more

people come in Evol it twg it Evol it twg it eventually it will get to a form which will go viral this is kind of point to the future of how things could happen so in Haan Bay you still find chanai

there are basically fakes there are reproductions of established Brands I'll give you an example because this is a a contemporary sort of shanai Smartwatch running on an Android system the reproductions were really the items that were sought after by people who could not afford the the real thing > "*Shanzhai*: imitation of trademarked brands or electronics my understanding is at the early shanai were people who worked for the bigger corporations here like Nokia Motorola foxcon and they were some very smart Engineers who got sick of the management and like look I can build a phone cheaper better faster than these guys can I understand why they have all this process I can make it for half the price if we just cut cut the fat and they would quit talk to their friends who they knew were all this Upstream suppliers and they would get together parts and they would build you know what were effectively you know copy cap phones the key Innovations are able to do at much much lower cost just you know learning how to walk before they could run essentially

the most similar things to the ideas of sandai in the west is the idea of Robin Hood they try to empower the pool with the latest advancement in technology Senai and maker movement startups they have very alike they have very much shared The Same Spirit even though they are not from big company they feel powerful when when they talk about people who left the factories and copied a phone well that was kind of like the open source stuff that wasn't open source they just sort of like oh the schematics are on the desk I will conveniently help myself to them make a photocopy and then leave the factory with them right you know was that stealing or was that open source right in in the west it's called theft right in out here it's called sharing this one of the devices that was a haul from the market and you can see it has a number of markings on it this one was the the higher grade version it was 70 80 bucks us but when you power it on you see that it's running a very well skinned flavor of Android iconography is actually pretty good and then the great thing is this one supports two SIM cards replaceable memory card and a replaceable battery and it comes with two batteries which is actually a feature that many local people really want to have they're they're unhappy about a having no memory card slot and B having not a replaceable battery the companies were able to access very easily the two basic components that you need to make a phone one is the goom ban which is basically a printed circuit board and the other one is the goo which is basically the shell so there were company specializing in making gooman and goomo that had slots for those printy circuit boards that were very easily accessible by by companies you know people from the West who are used to sort of month-long development Cycles like I'm like how did I do this this amazing like this capability came out of nowhere overnight but actually it's been honed over like a decade or two out of those roots of people you know coming out of the big factories and figuring this all out themselves

> Dremas change the world. Technology realises dreams. We created this unique "OPM"businesss model. Through independent innovative design, 3NOD offer individual products and complete solutions, by developing our 3 core competigtive advantages: innovation, speed and value. The future lies, were dreams are mad

Catherine Lee (corporate host, 3nod): OPM means "Original Planning Manufacturer". It is similar to OEM and ODM, but with OPM we have the property righ of the products. For example, these laptops and tables were produed under our OPM model.

shanai there is something that is still going on now but it is a very small percentage of what is produced in the market there is a very strong emerging middle class in China that has the purchase power to afford original items that may be more expensive than the reproductions it is not possible to Target new markets just with imitating the established Brands there is a limit to what can be achieved in that sense once they kind of got in a position where they could now build a copy of a phone pretty well they can now start innovating they'll take like an Android phone and iPhone and mash them together and come up with this weird thing that is pretty cool and is different some way you know if you go in in the Market inasan Bay you will find there many people Distributing this type of advertisements for company that are called White brand companies that will make it for you assembling there's different components and then you can add your your own brand your own name or whatever you want and distribute it as your own item yeah these are these are all white label ideas it's an empty sample and all these are different empty samples so they can go ahead and build it for you on the spot and then order I don't know however many you want and later on you can actually ask them to go ahead and put your your graphic on you know for example or maybe you know these logos over here

in the west our kind of philosophy is oh we come up with something really fantastically new that nobody's done before become the market leader and we're really successful the Chinese mentality is slightly different they look at something that's already on the market and then they create a much better version of it much quicker it's not copying it's evolution of product which becomes much better than what was out there before we grabbed another one on the market there looks like a smartwatch but you'll notice that it only has a single button and the Graphics are made for children so this is a phone plus GPS module that you can use to sort of report a kid's location if the kid is in trouble they can dial their parents you can see it has like SOS call features I would bet that probably 80 to 90% of the design material in here is borrowed from other vendors who use these previously in other Smartwatch designs but people are sharing the IP the guy who probably Shar the IP to them was someone who could sell them chips or motherboards or circuit boards and so there was some factory backing up that sharing process they want people to use these things and that lets these guys try try try like there's many models of this in fact when

we're were buying this there a woman next to us was asking for these and then

left on the table he said this one's too thick let's go find one that's that's that's thinner than this one over here they probably have less features or less battery life or whatever it is but the market here can build these different variants and service it because of the phenomenal ecosystem something is really happening companies are realizing the importance
of having new ideas and being different so many companies who were involved in the Shanay before are now looking at design they're now looking at how to develop innovation in their own companies the model that is being developed in shenen can actually be quite threatening in other parts of the world and it's not surprising that many American companies are now looking at models that are developed in China to see how they can adjust themselves foree so those are s of a product that we make this is President Obama I wear my headphone with my business partner Mitch Richmond this people has been here you know acon what I am got Justice picture my partner Venus Brown

this year is signed by Venus Brown what I am I forgot who signed this there somebody famous I forgot and this is my office hi and that's something I can't live without is my cigar like I can't do without my cigar sorry I just cussed we are not your traditional like a manufacturer right which is you know give me a product to manufacture we manufacture some like a monster and all that a car and creative outch lensy JBL all all the biggest industry we actually dominate anywhere between 8 to 12% of the US market on our audio side but what we're doing so different is we we have our own design house we're able to create some really cool Incredible product so here's like Design House some inspiration about what we can do we have like some instruments 3D printing rapid prototyping this team is designed in some characters in 3D this is a game it's Interactive Learning in China a lot of factories are very traditional so this is also very a new model the CEO he tried to to break this model and since since 2005 they are producing now for 45 Brands mostly International and mostly in US

Catherine Lee (corporate host, 3nod): We have now rrived in the smart home of 2030. This is the smart fridge of the future. This fridge can display nutritional value, place of production and use-by-datej, so you can always know what is healthiest to eat. When we are running out of food, we can just order it from the fridge.

you know most people don't realize that there's at least 26% of a technology from Silicon Valley actually come fromen so what they do is they hire kind of like a head hunter so to speak because there's so much Innovation we are about minimum of eight Monon to year Advance when it comes to technology for example we have a this incredible bed you can sleep on there and the moment you wake up in the morning it'll give you stats how many time you roll over how much sleep how much rest you have and then also can read your blood pressure can kind of tell you if you have any problem need to be identified and this is technology existing already today and we done this almost two years

Catherine Lee (corporate host, 3nod): This bathroom mirror will recognise you when you look at it. It will tell you your schedule, the weather and the

news for that day.

ago we s like 25% of innovation created in Chen are buy by the American they buy it they go to us and then they sell it here 100 time more expensive China feel a little bit bored I think about this business model we made it here but all the credit is is for some somebody else

Catherine Lee (corporate host, 3nod): Dingdong Dingdong, what's the weather in Shenzhen? "Today's weather: rain showers all day, the temperature is 23 to 28 degrees"Dingdong dingdong, stop broadcasting. ALready stopped.

house name is dle everybody is looking for the Chinese startup made in China want the proof to show to the world like look we innovate we have a lot of opportunity here I think our focus should be let's create a quality product and and you could be proud and say this is made in China so if you can just focus on that new technology to focus on a branding and to focus on a quality and I think within next 5 year people have different perspective of made in China I think that will happen

> When you offer someone a rose, the fragrance will stay on your hands. This was the motto used to recruit volunteers in Shenzen. Why did Shenzhen succeed? It's the trailblazing spirit to breaktrough from barriers and to reform. In the beginning, Shenzhen was producing very low-end products. The main focus was simple manufacturing, but after 20 years of development in Shenzhen, the city began to face pressures with its population, land and environment. Many other Chinese cities have caught up with SHenzhen in terms of development. Many people suggested Shenzhen should be abandoned. So how could Shenzhen continue to stay ahed of the chasing packs? Innovation.

what has happened in shenen within a 35 years of time its uniqueness is fading because those same Innovation say policy Innovation or industry Innovation now it's everywhere in China so it doesn't have that edge of being the only one or even the first one anymore it's kind of a catch 22 right it it recognizes what it it's been able to achieve but it's also inherent like how are you going to make it better people who come to S get older and then as the experience grows start to develop something new R manufacturing they become engineers they become Brands meanwhile the the government is pushing out manufacturer to the alterior of Shenzhen

BAO'AN DISTRICT, Shenzhen

Robin Wu (Ceo, Meegopad): These are actually PCs, you can just plug it into a TV, and it'll become functional pc. It has 4gb of ram, a 128gb flash storage, cots 40 pounds nad components are open-source

a lot of confusion is happening right now what I'm going to do what's next should I invest in branding or I just close my company I think it's a perfect

moment for Innovations because I can attract at least a portion of them to put the resources to innovate something new

Robin Wu (Ceo, Meegopad): We design our own products and manucfacture them to be perfect. That's how we developed successful brand. That means our IP has becoem stronger. I've patent on these, so if someon tries to copy it, I'll ask 'em not to. However, world's diverse. "AI"from Tesla, facebook and amazon's all open-source. However, apple's business logic is to create commercial competition. I don't like apple.

expr Facebook I've seen a change in the way that innovation in China happens there's a fantastic number of Chinese startups that are doing really really good products Chinese startups are are getting better because they want to to learn from Europe if you go to a conference with Innovation speakers from from France or from Germany or from England or whatever most of the people will be Chinese in the room

Robin Wu (Ceo, Meegopad): I started working a at a very low level. I was one of people who made "Shanzhai"products. In the past, everyone looked down on "Shanzhai"products. Now I think the idea of make is the same as "Shanzhai" . It's not about copying. "Shanzai"is a spirit. Spirit of bottom and grass roots. "Shanzai"are most creative, influential people in China.

they want to learn in the past 20 years everybody who wants to Mak in a Silicon Valley has to go through this very tight and small selection process by a small group of people who are the venture capitalist young white males between 20 to 30 controlling how technology will be developed how technology will be applied and how technology will be available to the general public that is the very definition of control economy

> Huawei sues Samsung for Patent infirgement - Wired
>
> Now samsung is suing apple over iphone 5 - Wired
>
> Apple trademakrs its sotr alyout Acrsoss Europe - wired
>
> Huwawei just copied iphone: down to last screw - wired

they're ready to have like these massive settlement fights and epic legal battles that go all to the Supreme Court and stuff like that if everyone we're like you know actually we all do a good job let's just work and try to figure out how to innovate but it's a matter of getting critical mass of people to buy into it without a Big Brand detecting what kind of feature we can have the sunai system is cing to everybody's need it's not a small group of people who determine what gets developed when and how right now we are still at the very early stage of this open source power movement if we Trace back to the late '90s the open source software just got started I mean Bill Gates was speaking publicly about how open source is communis

> Bill gates once derided open-source advocates [···] "some new, modern-day sort of communists"- new socialism (wired)

ms'ballmer: linux is communism - the register

and it will destroy the software industry and hey today Microsoft is one of the most supporter of Open Source

meet bill gates, man who changed open source software

now you can use linux just like microsoft does

and even open up the entire Windows 10 if the history of Open Source software is used as a benchmark we are pretty much 5 years away from this being discussed in mainstream it's a mindset change but the future is possible they talk about you know China's authoritarian strong rules and all sorts of stuff people here have developed a way to coexist with the rule of law and the way life needs to run they sort of look the other way at the right times I think when things need to happen this is how we've managed to make sure that everyone gets fairly compensated everyone's fairly rewarded and it works through this system the another thing to to be clear as a doesn't mean evil right it's just that there is one Authority I mean the Communist Party knows as as well as anyone else that they have to keep the people happy they're not just going to like kick people around because they want to and they want to be trivial and small about it so they try really hard to put economic policy in place that brings Prosperity one of the things that the government has has said is we need a service economy that's Tech oriented and and we need to get more young people interested in this the makeer movement we want to graph that into our system and hopefully Inspire another generation of young people to want to become you know hardworking Factory owners and employers and innovators like their parents were and and now there' s even like little maker spaces in cafes and Innovation Labs like popping up left

[···]

Abby Shan Yu (SEG Cafe): Maker Cafe was established last year with funding from Shenzhen University [···] support from SEG company [···] last year [···] premier of state council said: "Peole should start your own business and get involed with innovation."[···]

Chinese makers're different from aborad. Governemnt suprts us a lot, maybe only the chines government can do this

and right fore on one hand it's great that the national government have seen this emergence of New Media new technology and I think it's genuine to want to support it however I don't think there's a very good track record so far of governmental involvement in these more bottomup activities we take for example art districts something that was emerging out of China 10 20 years ago that really caught the imagination of artist colonies galleries but as soon as the government started to support it the inevitable process of gentrification happened rent went up more notable galleries moved in so the artists who really were trying to experiment had to move out so I have a concern along similar lines for these Tech sectors the government in trying to support it inevitably will formalize it it's interesting to sort of see the city evolve and so there's a sort of wave of money

and gentrification you can sort of rolling from the the you know from the East to the west and from the south to the north the pace at which they do is just crazy you can walk from one end of the city to the other and by the time you walk back to the other side enough the city will change that you won't recognize it it's just it's just tearing itself down and rebuilding itself as you walk through it there's a region over there that was all these little electronic shops they just leveled it put up a luxury mall and put a highrise on top of it and you wouldn' t recognize it

I mean we have more highrise here than anywhere in the world I mean honestly if you walk around centr right now we have over 278 buildings been built up to 704 I travel all over the world and when you look at everyone else like hey you know we are the fastest growing you know Society R industry today and that's just a fact in China there is a general lack of awareness of the negative ramifications of gentrification just as you know in the 60s no one ink thought that was a bad thing the reason why the city has embased this notion new technology it's trying to reinvent itself my concern is that in this reinvention it wants to very quickly rid of its even immediate past a city that really struggled really was dependent on a lot of things the government couldn't provide things happened by chance accidentally a lot of it was bottom up in fact there was not one fishing Village there were 2,000 these Villages have evolved along with the city they have taken up very important roles in providing housing providing a certain social structure jobs a certain stability to the city that was not planned it simply evolved with the formal City I would like it more like a you know sort of the bacterial colonies and Peach Tre dish eventually you grow a lawn of bacteria across it you know all the communities become interconnected but you that that's sort of the natural growth curve

BAISHIZHOU, SHENZHEN

we are we are in B which is one of the 300 more than 300 Urban Village in shenen and here like no matter what you don't need to go anywhere and you can find everything here that's the amazing part of this it provides everything you need for a community when the government designated shinen as a special economic zone they left patches of land for the villagers themselves to build homes this is the boundary line between the city and the Urban Village this side is a urban home and this is Urban Village home these Urban Villages are also breeding ground for a lot of innovation you can change the structure you can change the facade you can spill your Workshop into the Alleyways the whole neighborhood was built in this kind of bottom up way shinen really represents a new modern image it's a modern city it's a new city the urban Villages complete opposites to that image the mayor's office declared the necessity to rid the cancers of the society in those words B is going to be redeveloped this month actually April 2016 so this is how fast 150,000 people who lives here needs to be relocated there there's some room rumors that like the market here is eventually going to have to be displaced because as as things gentrify the rent on the shops are going to go up to the point where they can't sustain selling these like small parts and

whatnot just across the street there's much more Urban Village

going on that's that's where we're headed to and I can't say if it's For Better or For Worse but it's definitely things are changing and so you transition straight out of like the market into you know Urban Village area like this personally I have a bias and I hope that it never goes away because I I enjoy it so much and it's such a avilable resource to me you'll see big districts where people are taking phones and tearing them apart and then another area putting them together into another phone a lot of sort of recycling and upcycling going on so you can see like down there there's a person a with a what looks like a pile of trash but if you look closely it's just that they're going through mobile phones and stripping out parts from them

it's like shuing corn almost just take a quick walk through one of these informal areas selling iPhone recycle Parts he actually has big bundles of motherboards that he's they pulled out of phones that were previously thrown away and then what they do is they they take out the motherboards and they take the chips off and eventually find their way back down the market I you can get your like roast pigs feet and then iPhone cases this Market itself plays a kind of a CR critical part in the ecosystem in terms of being able to move Goods around you know if one Factory did a build and they had some excess and they want to get rid of it a lot of it will come through this market and get recycled through the system these are this one's um straight from a factory floor you can see that the motherboards are even still in the the carrier so this one was one that didn't even pass out of apple fully fabricated and if found its way into scrap here well people will go ahead and they'll you can already see they've pulled off some ic's for recycling and reprocessing into fixing phones and so forth on here is these here are blank motherboards and the interesting about this you see like no solder on it all they still have a gold color which means that there's been no processing of the board at all it's straight virgin boards from the facility you get to move on

we're getting a crowd I can get plenty of of useful stuff for a fraction of the price that you would have to even in the markets you know on the Main Street that's the stuff that's going away but those guys will innovate no matter what they innovated despite the government right they'll be they'll be there they'll keep walking and they may have cut a path that looked interesting and that path is now being paved into the road they'll cut another path you you you've never had a fox run over by a steamroller when they're when they're putting a road over a forest the fox knows how to move away right can it can run and find another place and as long as there's continues to be green fields for these people to go to I think I think things will be okay and and and demilitarizing the the Western typ ecosystem would be great right I think that's something we can do right but it's just as hard as bring us back from the brink of the Cold War you everyone has sort of ease off universally agree that we need have a new paradigm and I think one of the problems in doing that is that the militarization of of Ip has really benefited big companies and if they back off their stance of

having huge caches of Ip to to Nuke the little companies that come up they're threatened by Innovation and so instead of seeing like this openness come out you're seeing exactly the opposite you're seeing the system calcify and maybe will happen in the end days like you know sure they'll own their edifices but you know they'll become so entrenched that they can't move on right each of them is locked in their space and then a very flexible ecosystem like China will just roll over them later on and they'll wonder how that happened it's because they did it to themselves at the end of the day the beautifulness of you come here with your talents with your efforts your diligence you can earn a place for yourself the makers the how startup The Internet of Things producing how they all converge here in senen and that's what makes s the SEC valy of power

The power of engineers, and the power of SHanzhai supply chain in Shenzhen, should be borught to the world. Shenzhen's mission used to be, to indtroduce advanced tech from abroad. But SHenzhen has reached a new era, with a new mission, to realise the Chinese dream.

now you look at this light switch are they straight every fivestar Hotel everywhere in China right now this is a property good identified this is a perfect example if we can just have a person take two three second to just make that adjustment China will be a perfect place detail are they going to be more like the UK in the sense that they'll just shed the manufacturing background as they gentrify and and sort of just go straight for like you know a service economy or will they keep rooted in a sort of a manufacturing ecosystem and keep design parallel to it or will they just forever stay in manufacturing right is that really just their their core base and value with and where they want to be I mean if China went from where they were to where they are today in 30 years I could do that again in 30 years like within my lifetime we could see the answer to this question it'll be interesting to see where the answer ends up

FEATURING

HARRISON CHEN
ALEXANDER CHEN
[···]
YIN YU
[···]
IAN YANG
SHANE CHEN
CATHERINE LEE